Woodworking Lab Redesign

Trevor Smith
Industrial Technolgy
Ottumwa High School
John Deere Ottumwa Works

Part I: Overview of Business

- John Deere is a company that produces a vast array of agriculture, construction, forestry, and utility equipment.
- John Deere was established in 1837 by founder, John Deere. His first product was the steel plow which helped revolutionize the agriculture industry.
- The Ottumwa Works site was originally Dain Manufacturing and was built in 1900 by Joseph Dain. In 1911, John Deere purchased Dain Manufacturing company – This became Deere's first manufacturing facility in Iowa! John Deere Ottumwa Works designs and manufactures the highest quality hay and forage equipment including, round balers, large square balers, self-propelled windrowers, mower conditioners, and small square balers. The factory sits on 120 acres with 1.2 million square feet under roof!

Part II: Job Specifics

- Working as a member of the Manufacturing Engineering Team, Trevor worked on updating pre-existing production line layouts. The main objective of this project was to produce an up to date and correct layout for specific production lines. Once layouts were updated they were utilized in transitioning new equipment or procedures to better aid with streamlining and efficiency of the production line.

Part III: Introduce the Problem

- New equipment has been purchased for the Woodworking Lab. The entire Woodworking Lab needs to be re-arranged so the new equipment will fit and so it can be utilized in a safe and efficient manner. It is your responsibility to create a new layout of the lab so all of the equipment will fit and can be used in a safe and productive way.

Part IV: Background

What content knowledge/understandings does student need to solve the problem?

- Woodworking power equipment processes & safety procedure
- Utilization & reading of various measurement tools.
- Creation & manipulation of drawings/files with CAD software.

Part V: Business Solution

- John Deere's solution to the issue was to map out and generate an up-to-date layout of the current production line. Then manipulate and alter the layout in a CAD software until they were satisfied that they had safely and accurately met the needs of the production line. Whether that was transitioning new equipment, moving parts, or moving processes.

Part VI: Student Solutions

- I believe that the students solution to the issue will be to map out and generate an up-to-date layout of the current Woodworking Lab. Then manipulate and alter the layout in a CAD software until they are satisfied that they have safely and accurately met the constraints of the new Woodworking Lab.